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ABSTRACT

This document provides suggestions for community volunteer opportunities that involve students in partnerships with service agencies, governments, recycling programs, and environmental organizations. It consists of ready-to-copy project ideas complete with case studies, a set of worksheets for planning a project, and an appendix with additional resource information. The project idea/case study pages include a description of the project in general terms, summary of the need, suggestions on how high school students can become involved, pertinent background information, thought-provoking questions for students, and a sample of how a high school student has implemented the project. (MKR)

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Cycles for Science

ED 393 652

Community Volunteer Projects

Curriculum Supplement for Grades 9-12

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A Steel Cycles Program from the ***Steel Recycling Institute***

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About Cycles for Science

The *Cycles for Science Community Volunteer Projects* guide is designed for use by teachers, students, school environmental groups and community organizations seeking environmental and recycling service opportunities.

The *Cycles for Science* program also offers curriculum supplements for Biology, Chemistry, General/Earth Science and Physics. Based on input from teachers and solid waste management educators, each supplement contains project-oriented lessons and activities that combine a variety of science topics, manufacturing subjects, and environmental issues using real-life applications.

Cycles for Science was developed in cooperation with secondary teachers and solid waste management professionals to assist teachers and students in meeting state and local goals for science learning. This program is part of Steel Cycles, an educational program for grades pre-K through 12.

The Steel Recycling Institute

The Steel Recycling Institute (SRI) assists community leaders, recyclers, business people and educators in developing steel recycling programs and raising public awareness. Located in Pittsburgh, Pennsylvania, the SRI has established a network of regional offices to help communities create viable, sustainable steel recycling activity within existing programs. To supplement recycling activity and encourage long-term commitment to responsible solid waste management practices, the SRI is working toward the development of comprehensive educational programs.

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Preface

The *Cycles for Science Community Volunteer Projects* guide provides suggestions for community volunteer opportunities that involve students in partnerships with service agencies, governments, recycling programs and environmental organizations. This guide and the other educational materials available from the Steel Recycling Institute provide comprehensive education programs and materials that assist teachers and students in understanding their responsibility toward solid waste management and the environment. Through involvement in a community volunteer project, students learn firsthand the need to manage our resources wisely.

Volunteer opportunities for students are expanding as communities engage young people in organized community volunteer efforts. Many of these volunteer experiences are related to the environment and involve solid waste management projects. Solid waste management is an extensive process, and recycling is one of the solutions. A comprehensive solid waste approach includes recycling as well as reducing, reusing, waste-to-energy processing and landfilling.

When considering a recycling or solid waste management project, volunteers need to understand the current trends, legislation and opportunities for involving a school, business or community in such a project. Most solid waste organizations are involved in these issues and are responsible for planning or implementing local programs. It is essential to check with them to ensure the project you choose works well within the community's plans for solid waste management and recycling. It will also make the solid waste coordinator aware that you are working to encourage solid waste management and education. School and community partnerships often provide resources and rewards for everyone who is involved.

What are the Community Benefits and Educational Value of Volunteerism?

Volunteerism is gaining national support as a means of enhancing community services and offering opportunities for citizens to connect with their community. When volunteer service is linked to formal education, the learner acquires skills and knowledge that reinforce classroom learning. This type of volunteer service is often referred to as service-learning.

Volunteer experiences that are connected to the classroom benefit the community, schools, educators, and learners in many ways.

The Community

- Citizens are more engaged and active stakeholders, now and in the future.
- Valuable services are provided that otherwise might not be attainable.

The School

- Learners are motivated and responsible for their learning.
- Partnerships for learning are developed with businesses, government, colleges, parents and the community.
- Educational excellence is enhanced through a climate of enriched curriculum and performance-based evaluation.
- Improvment of image which may lead to continued and additional support from the community.

The Educator

- Students are motivated to learn.
- Colleagues, parents and community members are involved in education and in offering recognition as a reward for involvement.
- Opportunities arise for professional involvement.

The Learner

- Community pride and responsibility devolops through the knowledge that they can make a difference or meet a real need.
- Self-worth is heightened by a life-long service ethic.
- Citizenship and leadership skills allow discovery of individual roles in the community.
- Improvment of academic skills by thinking critically and applying academic skills and knowledge to community issues.
- Awareness of career opportunities is increased.

How are Volunteer Projects Integrated into Learning?

Educators may want to consider one or all of the following three models when integrating volunteer experiences with learning: service-learning, programmatic, and thematic approach.

In a ***service-learning*** approach to volunteerism, young people gain and apply academic and social skills by addressing authentic community needs and reflecting upon the experience. The classroom becomes more participatory as students become "owners" and designers of their learning. Service-learning is a national movement that promotes connection of volunteer experiences to the classroom, to the extent that the service motivates the learning. The following elements are critical in service-learning:

- Effective orientation and training that provide volunteers with an understanding of their tasks, the individuals to be served, the social issues involved, and methods for problem-solving.
- Meaningful service that addresses real community needs.
- Significant student involvement in defining and designing the volunteer experience.
- Structured reflection throughout the project to integrate volunteer experiences into classroom learning and enhance life skills.

A ***programmatic*** approach involves organizing the project based on how it will be implemented within the existing school structure. The volunteer project may be organized as a class project, a school-wide event, individual in-school volunteers, a club project, an elective class, or an interdisciplinary project. In designing a project, ask these questions:

- **Who** will take primary responsibility for managing the service project: a teacher, school counselor, principal, community service coordinator, staff or volunteers from a nonprofit organization, school volunteer, or parent?
- **When** will you organize the project: during class time, after school, or on selected days?
- **Where** will the project take place: in class, school, or the community?
- **How** will the project relate to the curriculum? Can lessons focus on a community issue?

A ***thematic*** approach involves organizing the project based on a theme or issue. The theme may be used for an interdisciplinary approach to classroom instruction that is reinforced by volunteer activities. Commonly used themes are listed below, with suggested *Cycles for Science Community Volunteer Projects.*

Environmental Protection and Restoration

- Clean up parks, rivers, lakes.
- Plant trees.
- Collect and analyze data.
- Advocate protection of endangered species.
- ***Projects*** — *Adopt a Waterway, Habitat for Wildlife*

Intergenerational Relationships

- Share thoughts and activities with a mentor.
- Solicit and document living histories.
- Share cross-age teaching experiences.
- ***Projects*** — *Living Historical Farms, Teaching Nature's for ME*

Recycling and Waste Management

- Collect and analyze data on waste generation.
- Assist in a school recycling program.
- Educate the community on recycling issues.
- Initiate a new recycling effort.
- ***Projects*** — *Appliance Recycling, Food Salvage, Recycling Production, School Recycling*

Social Issues

- Promote animal care and population control.
- Assist in providing food to the hungry.
- Assist in home improvement and building efforts for the homeless and those living in substandard housing.
- Promote public awareness of social issues.
- ***Projects*** — *Animal Shelters, Food Salvage, Habitat for Humanity*

Tutoring/Teaching

- Tutor/teach classmates or peers.
- Tutor/teach younger students.
- Tutor/teach students at another school.
- Create learning tools for others.
- ***Projects***— *Teaching Nature's for ME, Recycling Production*

How this Guide is Organized

Cycles for Science Community Volunteer Projects is designed to assist secondary teachers and students in implementing successful community volunteer projects. This "user-friendly" guide provides teachers with an approach to integrating real-life community issues into classroom learning. The Steel Recycling Institute supports the philosophy of "reduce, reuse and recycle," and the project ideas provided in this guide involve recycling and environmental themes or include tips for environmental and recycling awareness.

Community Volunteer Projects consists of ready to copy project ideas complete with case studies, a set of worksheets for planning a project, and an appendix with additional resource information. Although the guide is part of the *Cycles for Science* series, teachers from all subject areas will find it easy to use and easy to incorporate into the existing curriculum.

Project Ideas/Case Studies

The **first page** of each project idea/case study describes the project in general terms. Included on this page are a summary of the need, suggestions on how high school students can become involved, pertinent background information, and thought-provoking questions to help motivate your students.

The **second page** contains a case study to demonstrate how a high school has implemented the project. The case study begins with a project summary and a statement of student performance and products. Steps 1 – 5 in the case study correspond with the steps outlined in the worksheet *Student Checklist for Effective Projects*, page 21. Following the case study are tips for planning a similar project.

Water is a source of beauty, recreation and sustenance for life

Adopt A Waterway

Water is a source of beauty, recreation and sustenance for life. Nearly everything on earth is directly or indirectly related to water. Rocks channel surface water into streams that flow into rivers that carry water across the land. Ponds, lakes, and wetlands foster wildlife and hold water in place.

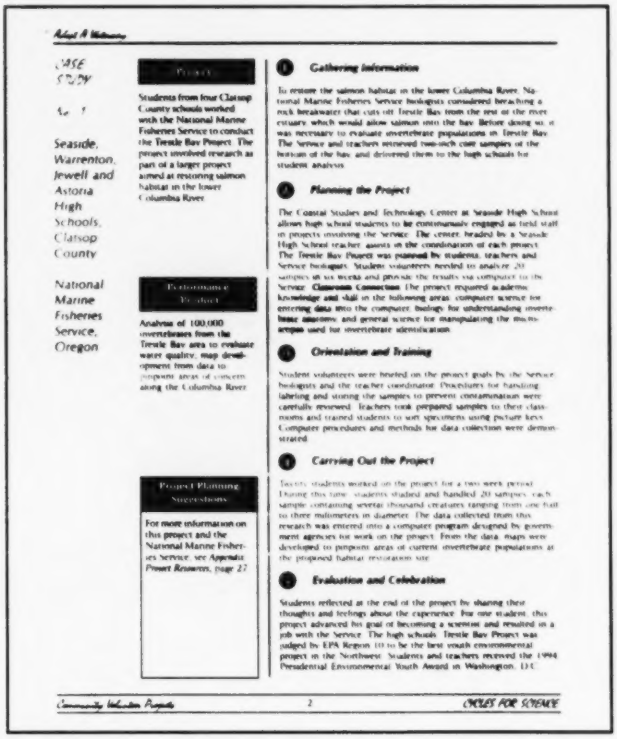
Wildlife needs water for survival. The water must be relatively clean and free of toxic contamination. Areas rich in water resources are homes to abundant wildlife. If we as humans are responsible, we will remember that we must protect and care for these waterways, and provide plants and animals with the habitat necessary for their growth and survival.

Pollution can stress an ecosystem beyond its capacity to support life. Pollution may be a result of chemical, thermal, organic or ecological causes. In our society, thoughts about the causes of pollution are typically related to human behavior. However, pollution can occur from sources other than human. For example, some acid rain results from volcanic eruption, and oil spills may come from the earth's crust. Through understanding of causes and effects of pollution, we are able to take constructive action now and in the future to protect and maintain a healthy environment.

Many schools and organizations are adopting a river, stream or pond, and monitoring waterways for conditions that may provide space, shelter and food for the plant and animal communities with which they are associated. Volunteer waterway projects may focus on litter clean-up, ongoing water quality testing, or seasonal counts of plants and animals.

- What governmental agencies or environmental organizations are responsible for waterway and wildlife management?
- What groups in your community are currently involved in a waterway adoption project?

CYCLES FOR SCIENCE 1 Community Volunteer Projects


Adopt A Waterway

CASE STUDY No. 1

Seaside, Warrenton, Jewell and Astoria High Schools, Clatsop County

National Marine Fisheries Service, Oregon

Project

Students from four Clatsop County schools worked with the National Marine Fisheries Service to conduct the Trestle Bay Project. The project involved research as part of a larger project aimed at restoring salmon habitat in the lower Columbia River.

Performance Product

Analysis of 100,000 invertebrates from the Trestle Bay area to evaluate water quality, map development from data to pinpoint areas of concern along the Columbia River.

Project Planning Suggestions

For more information on this project and the National Marine Fisheries Service, see *Appendix Power Resources, page 27*

1 Gathering Information

To restore the salmon habitat in the lower Columbia River, National Marine Fisheries Service biologists considered breaching a rock breakwater that cuts off Trestle Bay from the rest of the river estuary which would allow salmon into the bay. Before doing so, it was necessary to evaluate invertebrate populations in Trestle Bay. The Service and teachers retrieved two-inch core samples of the bottom of the bay and delivered them to the high schools for student analysis.

2 Planning the Project

The Coastal Studies and Technology Center at Seaside High School allows high school students to be continuously engaged as field staff in projects involving the Service. The center, headed by a Seaside High School teacher, assists in the coordination of each project. The Trestle Bay Project was planned by students, teachers and Service biologists. Students volunteered to analyze 20 samples in six weeks and provide the results via computer to the Service. Classroom Connection: The project required academic knowledge and skill in the following areas: computer science for entering data into the computer; biology for understanding invertebrate anatomy and general science for manipulating the macroscopes used for invertebrate identification.

3 Orientation and Training

Student volunteers were briefed on the project goals by the Service biologists and the teacher coordinator. Procedures for handling, labeling and storing the samples to prevent contamination were carefully reviewed. Teachers took prepared samples to their classrooms and trained students to sort specimens using picture keys. Computer procedures and methods for data collection were demonstrated.

4 Carrying Out the Project

Twenty students worked on the project for a two week period. During this time, students studied and handled 20 samples, each sample containing several thousand creatures ranging from one half to three millimeters in diameter. The data collected from this research was entered into a computer program designed by government agencies for work on the project. From the data, maps were developed to pinpoint areas of current invertebrate populations at the proposed habitat restoration site.

5 Evaluation and Celebration

Students reflected at the end of the project by sharing their thoughts and feelings about the experience. For one student, this project advanced his goal of becoming a scientist and resulted in a job with the Service. The high schools Trestle Bay Project was judged by EPA Region 10 to be the best youth environmental project in the Northwest. Students and teachers received the 1994 Presidential Environmental Youth Award in Washington, D.C.

Community Volunteer Projects 2 CYCLES FOR SCIENCE

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Worksheets

The worksheets included in this guide are designed for use in planning a volunteer project. The five worksheets provide students with a step-by-step process for organizing and evaluating a project. The teacher's role is to provide copies of the worksheets for each student team and guide the students through the process. It is suggested that the worksheets be used in the following order.

1. Student Checklist for Effective Projects

This worksheet provides a checklist for each area of planning: gathering information, planning the project, orientation and training, carrying out the project, evaluation and celebration. These categories also appear in the case studies. The other worksheets are referenced throughout the checklist.

2. Student Skill/Interest Survey

This worksheet provides the teacher with a means to screen students for specific tasks and projects based on their skills and interest. The general interests listed on the worksheet are randomized to avoid bias.

3. Project Planning Guide

This worksheet provides the matrix for project planning. Students are asked to identify the tasks, knowledge, skills and experience needed for each task. Students also answer logistical questions about the projects, such as who will volunteer, when volunteers will be available, what orientation and training will be provided, and how volunteers will be transported to the volunteer site.

4. Student/Teacher Contract

This worksheet asks the student to make a commitment to the project and allows the project teachers and classroom teachers to acknowledge the student's involvement in the project.

5. Student Assessment by Sponsoring Agency

This worksheet provides the sponsoring agency with a rating system for student evaluation and the opportunity to comment on the overall project.

Appendix

Listings in the *Appendix* are referenced throughout the guide, particularly in the "Project Planning Suggestion" section at the end of each case study.

The Steel Recycling Institute invites you to share your project for consideration for the second edition of *Community Volunteer Projects*. See *SRI Program Feedback*, page 30.

Case Studies at a Glance

Adopt a Waterway

Students from four Clatsop County, Oregon schools worked with the National Marine Fisheries Service to conduct the Trestle Bay Project. The Project involved research as part of a larger project aimed at restoring salmon habitat in the lower Columbia River.

Performance/Product	invertebrate analysis, mapping
Classroom Connection	computer science, biology, general science

Animal Shelters

The Franklin County, Ohio Animal Shelter handles an average of 1,000 stray dogs per week. Newspapers are used to line animal cages, which are changed three times daily. Groveport Madison High School students served as technicians at the shelter and cooperated with the school recycling project to provide discarded newspapers to the shelter.

Performance/Product	medical testing, stray animal care, reusing newspaper for bedding
Classroom Connection	microbiology, chemistry, environmental science, life skills

Appliance Recycling

In a unique partnership effort in western Pennsylvania, the Allegheny County Department of Waste Management, Duquesne Light Co., Steel Recycling Institute, U.S. Steel, and Tube City, Inc. teamed with volunteers, including high school students, to sponsor an appliance recycling event.

Performance/Product	collection and recycling of appliances and metal containers
Classroom Connection	art, language arts, communications, environmental science

Food Salvage

Genesis Alternative School provides academic and vocational training in a clinical setting to students in the Chicago Public Schools. Volunteer programs at the Greater Chicago Food Depository and other sponsoring agencies provide students with role models, job experience and life skills that aid in career development.

Performance/Product	preparation of donated food for transport to community kitchens and food pantries
Classroom Connection	curriculum integration, students receive credit and develop marketable skills

Habitat for Humanity

Students formed the first high school chapter of Habitat for Humanity in western North Carolina, complete with officers and regular meetings. The Carolina Day School chapter has 15-20 members, involves 25-30 percent of the 140 high school students each year, and involves school staff and community members in its projects.

Performance/Product	construction site labor, fund-raising activities
Classroom Connection	language arts, communications, industrial arts, technology

Habitat for Wildlife

Members of the North Cobb High School S.A.V.E. Environmental Club followed guidelines from the National Wildlife Federation and the Georgia Wildlife Federation in establishing a certified habitat for native wildlife and to beautify a section of the school grounds.

Performance/Product a 200-square-foot bird and butterfly garden
Classroom Connection ecology, biology, horticulture

Living Historical Farms

As part of the Santa Fe (New Mexico) Indian School's innovative Youth-Elder Mentorship program, ninth grade students perform service at El Rancho de las Golondrinas. This living historical ranch was originally a colonial Spanish *hacienda*, established in 1710 and family-owned until 1933.

Performance/Product assistance with corral, fence and trail maintenance
Classroom Connection curriculum integration with academic focus determined prior to each visit, language arts, photographic arts

Recycling Production

SC Johnson Wax (Milwaukee, Wisconsin) selected John Marshall High School to assist its Environmental Actions Department in producing "Time and Time Again," a video that educates students, teachers and recycling coordinators about the role of individuals in diverting recyclable material from landfills to recycling facilities.

Performance/Product production of a 15- minute environmental education video featuring new information about aerosol can recycling
Classroom Connection language arts, environmental science, music, video production

School Recycling

In Miami, Florida, G. Holmes Braddock Senior High School students organized a school recycling system as part of the Dade County Public Schools recycling program.

Performance/Product workable school recycling system, promotion of the system
Classroom Connection language arts, communications, general science, art

Teaching Nature's for ME

Scotia-Glenville and Schenectady High School students attended a *Nature's for ME* workshop in Syracuse, New York to learn methods for teaching environmental and recycling activities to preschool children. As a result of the training, students established cross-age teaching programs in various Head Start classes.

Performance/Product teach environmental and recycling activities to preschool children
Classroom Connection art, language arts, environmental science, music, home economics

How to Manage a Project

As a teacher or volunteer coordinator, it is your responsibility to involve students in leadership roles for selection and management of the project. However, as students may have yet to acquire necessary training and experience, you, the coordinator, may need to manage and supervise many project tasks. The project you select can easily be managed using the *Student Checklist for Effective Projects*, page 21, and other worksheets provided in this guide; and by referring to the suggestions for community outreach, project administration, and learning connections given on the following pages.

Community Outreach

Project Opportunities and Selection

Interview potential sponsoring agencies and compile a list of contacts for the environmental, recycling and/or solid waste management projects selected. The blue and yellow pages of your local telephone book are useful resources in this step.

Sponsoring Agency Orientation and Training

Arrange a visit to the sponsoring agency for students before the first volunteer experience. This first contact may involve orientation and training. Prepare an information handout for the sponsoring agency, including a school and student volunteer program overview, school contacts and phone numbers, a description of the role of the sponsoring agency, and policies and procedures. (See page x for suggestions.)

Adult Volunteer Recruitment

Compile a list of community and parent volunteers who are interested in environmental, recycling and/or solid waste management projects.

Student Volunteer Recruitment

Use the *Student Skill/Interest Survey*, page 22, to compile a list of students interested in environmental, recycling and/or solid waste management projects. As appropriate, solicit additional volunteers for the project from the student body.

Project Recognition

Prepare a list of media contacts from your local newspaper and radio and television stations. For celebrations, compile a mailing list of school board members, government officials, leaders of community organizations and other interested groups. Create a standard news release and have readily accessible the procedures and deadlines for submitting news to the media.

Tips for the Sponsoring Agency on Volunteer Management

- Introduce students to the staff, the overall organization and your organization's goals; illustrate how students fit into agency functions.
- Provide adequate initial direction to students so that they feel comfortable and able to operate independently.
- Designate an agency representative to be responsible for each student's evaluation.
- Include students in as many activities as possible (with proper safety assurances).
- Provide help to students. Routinely ask students how they feel about the experience and their performance.
- Establish policies and procedures with regard to the following issues:

  Attendance – The students are scheduled to come every (day/date/time). If a student is absent, that student is instructed to phone the agency and reschedule. If attendance is irregular, please contact the teacher coordinator immediately.

  Handling money – When/if students are permitted access to cash, agency and student protection is a necessity. Develop a system that includes balancing all funds prior to the end of each student visit.

  Problem solving – As part of the student's experience, assure each student that it is best to bring situations of concern to your attention. This will allow you to serve as a mentor as well as addressing issues as they arise. If a resolution cannot be made, please contact the project coordinator immediately.

  Safety – Be aware of the restrictions of child labor laws that apply to minors present in your agency. Though these students are not paid employees, they are governed by federal and state laws. Note that persons under 18 years of age may not use power machinery, work on conveyor belts, or be near dangerous chemicals. Should student injury or illness occur, the project coordinator should be contacted immediately, who will report it to the student's parent or guardian. Appropriate accident forms should be completed.

Project Administration

School Board Resolution of Support

Notify the school board and school administration of your project, and request a resolution of support at the next school board meeting.

Project Budget

Estimate the costs associated with the project and prepare a budget. Identify possible sources for in-kind contributions of time, resources, equipment, supplies and transportation.

Finances and Sources of Funding

Procure the necessary funding for the project by first asking what resources are available from the school. Then ask the sponsoring agency if they can provide any resources. For remaining costs, seek support and funding through public and private grants, and contributions.

Liability

Be aware of liability issues related to your project. Consult the sponsoring agency when identifying these issues. General liability for all projects should be covered by requiring students and parents to sign a permission form and liability waiver in order to participate in the project. Provide these signed documents for the sponsoring agency in addition to an accident report form. Be certain to keep copies of all such documents. The school should have these standard forms. A sample permission form is on page xiv. Check with your school for specific requirements.

Equipment and Supplies

For each project, prepare a list of the necessary equipment and supplies. First aid kits should always be among standard equipment. Refer to the "Finances and Sources of Funding" section above for funding suggestions for purchasing equipment and supplies.

Reporting and Evaluation

Prepare a final project report to be presented to the school board, the sponsoring agency, the media, and all volunteers at a celebratory event. Be certain to send a letter of appreciation to the sponsoring agency and all others who were integral in the project. Assess student participation in the project by asking the sponsoring agency to complete the worksheet *Student Assessment by Sponsoring Agency*, page 26.

Learning Connection

Staff Development

Invite all teachers, staff and administrators to be involved in the project. If they are unable to participate, inform them of the project progress and the academic skills that will benefit students in performing assigned tasks. Ask teachers to connect their classroom learning to the project whenever appropriate.

Teacher/Student Volunteer Contract

Ask students to complete the *Volunteer Contract* worksheet, page 25, and request that their classroom teachers sign off on the project, particularly teachers of classes that will be missed as a result of the project schedule.

Youth Leadership

One of the major goals of the project is to encourage youth leadership. Assign one or more students to each of the community outreach and project administration tasks described in "How to Manage a Project" section. Encourage students to take responsibility for individual project tasks whenever possible (e.g., writing the standard news release).

Student Assessment

The assessment tools required in your school may be complemented by utilizing authentic assessment, in which students are evaluated by their performance rather than by standard testing. The same options used for reflection may be used in student assessment. The *Student Assessment by Sponsoring Agency,* page 26, is also useful in assessing student performance.

Tips for Fostering Reflection

In order to connect volunteer activities with learning, encourage students to share their experiences through formal and informal presentations. The following are some ideas for encouraging reflection.

- Schedule regular periods for discussion and sharing individual experiences.
- Integrate times for reflective techniques throughout the experience.
- Allow spontaneous reflection as issues and concerns arise. These "teachable moments" often lead to the most profound learning.
- Link reflection with other reading, writing, discussion, or project assignments so students may relate volunteer experiences to academic skills.
- Allow time for responses. Facilitate this time so that all learners have equal opportunity to speak.
- Reflective thoughts vary with the individual. Be certain not to pressure students for comment, allow them to "pass" on a round of discussion.

Options for Reflection Activity

Speech
one-on-one conferences with teacher or student leader; organized class/group discussions; informal discussions at celebratory events; oral reports; discussions with community members or experts on an issue; public speaking about the project; testifying before policy makers; conference/workshop presentations

Writing
essays or papers; project reports; daily logs; guide for future volunteers; self-evaluations or project evaluations; newspaper or magazine-style articles

Reading
fiction – short stories, novels, topic-related poetry; non-fiction – newspaper and magazine articles, position papers or essays, local, state and/or federal policies

Critical Thinking
analysis and problem solving; peer teaching or teaching younger students; gathering information that relates to the project; planning future projects; budgeting; simulations or role-playing activities; surveys or field-based research

Multimedia/Kinesthetic
photo, audio or videotape presentations; audio or video narratives; scrap books; interactive computers; paintings, drawings or other art work; dance, musical or theatrical presentations

Sample Permission Form

Check with your school for specific requirements.

Date _____

Dear Parent/Guardian,

Our Community Volunteer Project _____(name/description of project)_____ is an exciting part of our curriculum in which students will use their classroom learning to help meet real needs. In addition, the experiences your son or daughter can gain from this project will help reinforce his or her classroom learning.

We will begin the project on _____(day/date/time)_____ The activities your son/daughter will perform are as follows:

Your son/daughter will be supervised by _____(name/title)_____ _____(telephone number)_____

The project will take place on _____(days/times of project)_____

Transportation to the project will be _____(means of transportation)_____

Please fill out the permission form below and return it to the school by _____(deadline)_____

Sincerely,

Student name _____

Project name _____

I understand and would like to participate in the project.

_____ _____

Signature of Student *Date*

My son/daughter has my permission to participate in the project.

_____ _____

Signature of Parent or Guardian *Date*

Adopt A Waterway

Water is a source of beauty, recreation and sustenance for life.

Did you know...

- In many states, annual waterway clean-ups are organized, involving hundreds of volunteers.
- Some organizations ensure that the litter collected during waterway clean-ups is separated for recycling.

Water is a source of beauty, recreation and sustenance for life. Nearly everything on earth is directly or indirectly related to water. Rocks channel surface water into streams that flow into rivers that carry water across the land. Ponds, lakes, and wetlands foster wildlife and hold water in place.

Wildlife needs water for survival. The water must be relatively clean and free of toxic contamination. Areas rich in water resources are homes to abundant wildlife. If we as humans are responsible, we will remember that we must protect and care for these waterways, and provide plants and animals with the habitat necessary for their growth and survival.

Pollution can stress an ecosystem beyond its capacity to support life. Pollution may be a result of chemical, thermal, organic or ecological causes. In our society, thoughts about the causes of pollution are typically related to human behavior. However, pollution can occur from sources other than human. For example, some acid rain results from volcanic eruption, and oil spills may come from the earth's crust. Through understanding of causes and effects of pollution, we are able to take constructive action now and in the future to protect and maintain a healthy environment.

Many schools and organizations are adopting a river, stream or pond, and monitoring waterways for conditions that may provide space, shelter and food for the plant and animal communities with which they are associated. Volunteer waterway projects may focus on litter clean-up, ongoing water quality testing, or seasonal counts of plants and animals.

- What governmental agencies or environmental organizations are responsible for waterway and wildlife management?
- What groups in your community are currently involved in a waterway adoption project?

CASE STUDY

No. 1

Seaside, Warrenton, Jewell and Astoria High Schools, Clatsop County

National Marine Fisheries Service, Oregon

Project

Students from four Clatsop County schools worked with the National Marine Fisheries Service to conduct the Trestle Bay Project. The project involved research as part of a larger project aimed at restoring salmon habitat in the lower Columbia River.

Performance/ Product

Analysis of 100,000 invertebrates from the Trestle Bay area to evaluate water quality; map development from data to pinpoint areas of concern along the Columbia River.

Project Planning Suggestions

For more information on this project and the National Marine Fisheries Service, see *Appendix: Project Resources*, page 27.

1 Gathering Information

To restore the salmon habitat in the lower Columbia River, National Marine Fisheries Service biologists considered breaching a rock breakwater that cuts off Trestle Bay from the rest of the river estuary, which would allow salmon into the bay. Before doing so, it was necessary to evaluate invertebrate populations in Trestle Bay. The Service and teachers retrieved two-inch core samples of the bottom of the bay, and delivered them to the high schools for student analysis.

2 Planning the Project

The Coastal Studies and Technology Center at Seaside High School allows high school students to be continuously engaged as field staff in projects involving the Service. The center, headed by a Seaside High School teacher, assists in the coordination of each project. The Trestle Bay Project was planned by students, teachers and Service biologists. Student volunteers needed to analyze 20 samples in six weeks and provide the results via computer to the Service. **Classroom Connection** The project required academic knowledge and skill in the following areas: computer science for entering data into the computer, biology for understanding invertebrate anatomy, and general science for manipulating the microscopes used for invertebrate identification.

3 Orientation and Training

Student volunteers were briefed on the project goals by the Service biologists and the teacher coordinator. Procedures for handling, labeling and storing the samples to prevent contamination were carefully reviewed. Teachers took prepared samples to their classrooms and trained students to sort specimens using picture keys. Computer procedures and methods for data collection were demonstrated.

4 Carrying Out the Project

Twenty students worked on the project for a two week period. During this time, students studied and handled 20 samples, each sample containing several thousand creatures ranging from one-half to three millimeters in diameter. The data collected from this research was entered into a computer program designed by government agencies for work on the project. From the data, maps were developed to pinpoint areas of current invertebrate populations at the proposed habitat restoration site.

5 Evaluation and Celebration

Students reflected at the end of the project by sharing their thoughts and feelings about the experience. For one student, this project advanced his goal of becoming a scientist and resulted in a job with the Service. The high schools' Trestle Bay Project was judged by EPA Region 10 to be the best youth environmental project in the Northwest. Students and teachers received the 1994 Presidential Environmental Youth Award in Washington, D.C.

Animal Shelters

Animal shelters play an important role in controlling stray animals and finding homes for them.

Animal shelters play an important role in controlling the number of stray animals and finding homes for them. Wildlife rescue centers are specialized animal shelters that assist injured or sick wild animals and attempt to return these animals to their natural habitat.

Most animal shelters rely heavily on volunteers to perform many functions. In fact, at some shelters the volunteers far outnumber the staff! Volunteers relieve the staff of some of the work load and assist the animals physically and even emotionally. The help that volunteers give to the shelter alleviates some of the community problems caused by stray pets or improper treatment of animals, and may aid in the protection of wild species.

High school students involved in an animal shelter project can assist the shelter in a variety of ways that may change daily, depending upon the needs of the animals. Tasks may include general care of the animals, assisting with physical examinations and lab tests, helping in pet behavior sessions, coordinating adoptions, greeting visitors, answering phones, assisting with mailings and clerical work, and perhaps landscaping and building maintenance. At a wildlife rescue center, volunteers may help with species identification and rehabilitation. As an additional service to the community, the project may be set up in conjunction with a newspaper recycling program, with students providing discarded newspapers to the shelter for use as animal bedding.

- Is there a problem in your community with stray or neglected pets, or with sick or injured wildlife?
- Are you familiar with an animal shelter or a wildlife rescue center in your community?
- What are the functions of the agency? How does it benefit your community?
- What are the shelters' needs? What could you do to help them meet those needs?

Did you know...

- Animal shelters in the U.S. are currently managing 12 million dogs and cats, and 1.5 million other animals every year.
- A wildlife rescue center in Ohio with two staff members and 125 volunteers admitted 3,627 animals and received 11,000 telephone calls in 1993.
- Large animal shelters may use in excess of a ton of newspaper for bedding each month.

CASE STUDY

No. 2

Groveport Madison Schools Community Service Learning/ LINK Program, Groveport, Ohio

Franklin County Animal Shelter, Columbus, Ohio

Project

The Franklin County Animal Shelter handles an average of 1,000 stray dogs per week. Newspapers are used to line animal cages, which are changed three times daily. In the Franklin County Animal Shelter Project, Groveport Madison High School students serve as technicians and cooperate with the school recycling project to provide newspapers for the shelter.

Performance/ Product

Providing the animal shelter with discarded newspapers for bedding, and performing medical tests and care for stray animals.

Project Planning Suggestions

If there is no animal shelter convenient to your school, consider volunteering with a local veterinarian who affiliates with an animal shelter.

1 Gathering Information

The Groveport Madison Schools Community Service Learning (CSL)/LINK Program is an ongoing program for integration of community service projects into the high school curriculum. Projects and sponsoring agencies are selected by a student committee, based upon student interest. Volunteers may choose from a variety of projects, including recycling and animal care.

2 Planning the Project

Volunteers are asked to sign a liability waiver relieving the shelter of responsibility for any medical conditions (including allergies) which might arise from handling animals. Adult volunteers are scheduled to drive students to the shelter in the CSL/LINK van. Arrangements are made with students involved in the recycling project to donate newspapers to the animal shelter. **Classroom Connection** The project complements academic knowledge and skill in the following areas: microbiology for using microscopes and studying parasites; chemistry for performing laboratory procedures; environmental science for reusing newspaper as a solid waste management tool; and life skills for identifying responsible pet care and fulfilling a commitment to the shelter.

3 Orientation and Training

All volunteers are required to submit an emergency medical release showing up-to-date immunizations. Students are trained in veterinary skills and animal handling techniques by the shelter veterinarian, and coached on methods for physically and emotionally dealing with cases of animal abuse and neglect.

4 Carrying Out the Project

Two groups of seven student volunteers each visit the animal shelter for two hours on alternating Wednesdays for one semester. At the shelter, students work in teams of two to perform tasks assigned to them each day. Tasks include checking dogs for general health and cleanliness, administering vaccinations, taking and screening blood samples for heartworms, and evaluating stool samples for parasites. Volunteers provide treats and affection to each dog, with extra attention given to those dogs suffering from abuse or neglect. In addition to their technical duties, students transport between one and two tons of newspaper to the shelter each month.

5 Evaluation and Celebration

Volunteers meet as a group after each shelter visit to discuss and reflect upon their experiences. The shelter veterinarian submits an evaluation to the CSL/LINK Program Coordinator at the end of the project. Certificates of achievement are presented to each volunteer, and T-shirts are awarded to those who donate extra time.

Appliance Recycling

The average American family owns six major appliances, and nearly 99 percent of them own at least one refrigerator.

The average American family owns six major appliances, and nearly 99 percent of them own at least one refrigerator, and more than 80 percent own washers and dryers. Air conditioners, dishwashers, dehumidifiers and freezers are also convenient, time- and labor-saving appliances upon which many people rely.

Although the average "life span" of a major appliance is 20 years, appliances eventually cease to be useful and require disposal. The typical appliance consists of about 75 percent steel by weight, and despite the presence of various electrical and mechanical parts that must be removed for processing, appliances are commonly recycled. Appliance recycling conserves natural resources, saves valuable landfill space and disposal costs, and discourages the illegal dumping of appliances and the resulting costs involved in cleaning up illegal dump sites.

Appliance recycling involves collecting and hauling appliances to a processing center, removing motors, switches and other components, collecting refrigerants so as not to release them into the air, shredding the appliance, recovering the steel with a powerful magnet, and shipping the steel to a steel mill for processing into new products.

High school students can be involved in an appliance recycling project by initiating the program, encouraging involvement of local officials, serving on planning committees, advertising recycling events with flyers and public service announcements, helping at the collection event by assisting with public education, directing traffic, and perhaps, handling the appliances.

- Which local agencies are responsible for recycling and solid waste management?
- How are discarded appliances currently managed in your community (disposed of in a landfill, recycled, refurbished)?

Did you know...

- There are approximately 3,100 appliance recycling programs in the United States.
- More than 1.9 million tons of steel were recovered from recycled appliances in 1994, resulting in a recycling rate greater than 70 percent.
- As of early 1995, 21 states had banned appliances from landfills.

CASE STUDY

No. 3

Residents and High School Volunteers, Allegheny County, Pennsylvania

Allegheny County Department of Waste Management

Project

In a unique partnership effort in western Pennsylvania, the Allegheny County Department of Waste Management, Duquesne Light Company, the Steel Recycling Institute, Tube City, Inc. and U.S. Steel teamed with volunteers, including high school students, to sponsor an appliance recycling event.

Performance Product

An event to collect and recycle appliances and metal containers from seven collection sites in Allegheny County.

Project Planning Suggestions

Request the *Appliance Recycling Guide for Community Clean-Up Programs* from the Steel Recycling Institute. (See *Appendix: Project Resources*, page 27.)

1 Gathering Information

A planning committee of representatives from participating organizations and the community referred to the *Appliance Recycling Guide for Community Clean-up Programs* for information and data. (See *Appendix: Project Resources*, page 27.)

2 Planning the Project

The committee followed the steps outlined in the above referenced guide to plan the project. The committee identified existing appliance collection programs, scrap dealers and appliance recyclers, utility officials, and chlorofluorocarbon (CFC, a refrigerant) removal companies. The event was scheduled for two Saturdays at seven sites that were familiar to residents, had low traffic volume, and were accessible to large scrap trucks and equipment. Materials to be accepted included washers, dryers, refrigerators, dishwashers, air conditioners, and empty paint and aerosol cans. Items not to be accepted included gas tanks, 55-gallon drums, batteries, and full or partially full paint and aerosol cans. A collection fee was set for appliances containing refrigerant. Event promotion included flyers, banners, newspaper and radio ads, utility bill inserts and cable access. **Classroom Connection** The project required academic knowledge and skill in the following areas: art and language arts for developing flyers, banners, and ads; public speaking for event promotion; and environmental science for explaining the background of the project. Students' personal growth was enhanced by tasks involving cooperative work on committees and interaction with the public.

3 Orientation and Training

Volunteers handling recyclables were required to wear pants and long-sleeved shirts, safety glasses, gloves and substantial shoes. Volunteers were asked to arrive half an hour early for a briefing on the site plan and safety procedures, and were required to sign a liability waiver. Students were not permitted to do heavy lifting.

4 Carrying Out the Project

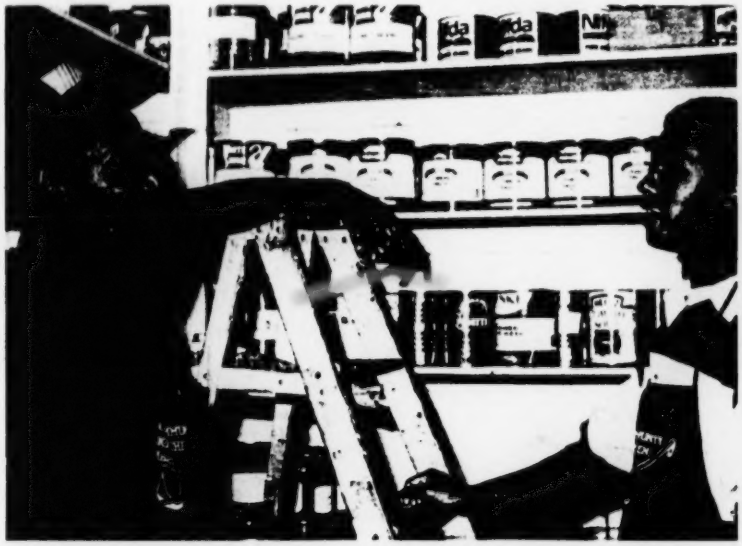
On the collection days, volunteers directed traffic, collected information from residents, educated the public about permanent year-round recycling options for appliances, unloaded cars, monitored scrap boxes, provided volunteer refreshments and managed public giveaways.

5 Evaluation and Celebration

More than 1,200 appliances were recycled during this event. A post-event meeting was held to evaluate the collection process and determine what changes should be made for future events. In celebration, the event was publicized in a news release.

Food Salvage

It is likely that there are community kitchens, meal programs, and homeless shelters in your community.



It is likely that there are community kitchens, meal programs, and homeless shelters in your community that rely on food donations. Food salvage programs (also called food transfers, donations or rescue) are programs that match donor organizations (e.g., restaurants, bakeries, grocery stores) with recipient agencies that provide meals to economically disadvantaged people. Food from donor agencies that is not sold but is edible is delivered either directly to the recipient agency or to a food depository that in turn delivers it to recipient agencies. Partnerships such as these provide food for the hungry and thus reduce the amount of food waste disposed of in landfills.

High school students involved in a food salvage project can coordinate resources, collect food from donor organizations and deliver it to recipient agencies, or assist a food bank in processing food donations.

Food is often donated to food salvage programs in steel cans and other recyclable containers. Student volunteers can help recipient agencies organize and implement food container recycling programs. To do so, students may investigate the correct methods for the cleansing, storage and collection of recyclable containers, and then assist with and train recipient agency staff.

- Does your community have a population of undernourished people?
- Are there community kitchens, food pantries or homeless shelters in your area? How do these agencies obtain their food?
- What materials are recyclable in your community? Could the recipient agency recycle empty food containers?

Did you know...

- In 1993, food waste in the United States amounted to 13.8 million tons, or 6.7 percent of the total municipal solid waste stream (Source: U.S. EPA data).
- Steel food cans used in food service operations are currently recycled by thousands of institutions in North America.
- Several states have Good Samaritan or Food Donation Liability laws that release the donor organizations from liability if anyone should become ill from food donated to a meal program.

CASE STUDY

No. 4

Genesis Alternative School, Chicago, Illinois

Greater Chicago Food Depository, Chicago, Illinois

Project

Genesis Alternative School, located in the business district of downtown Chicago, provides academic and vocational training in a clinical setting to students in the Chicago Public Schools. Volunteer programs at the Greater Chicago Food Depository and other sponsoring agencies provide students with role models, job experience and life skills that aid in career development.

Performance Product

Student volunteers sort, inspect, and repackage donated food in preparation for transport of the food to community kitchens and food pantries in the Chicago area.

Project Planning Suggestions

Contact the United Way for a list of agencies that provide food to economically disadvantaged people in your area. (See *Appendix: Project Resources*, page 27.)

1 Gathering Information

The Director of Vocational Training at Genesis identifies prospective sponsoring agencies from personal knowledge and by referring to the *Human Care Services Directory* published by the United Way. Each year, a team of teachers matches students with agencies, based on student portfolios and interest. Several students volunteer at the Greater Chicago Food Depository, which processes millions of pounds of food donations and has a strong volunteer program in place.

2 Planning the Project

Teams of students aged 16 and older, accompanied by a Genesis staff supervisor, work at the Depository several times each week. Individual schedules are determined by student age, readiness, and student track. (In this school, college-track students focus on academics, and vocation-track students focus on the volunteer site.) Students generally use public transportation, and go directly to the site from home or report to the school first, as arranged with the staff supervisor. **Classroom Connection** Volunteer projects are integrated into the curriculum and students receive credit as they learn marketable skills. Student social and personal growth is enhanced by interaction with Depository staff and the knowledge that student volunteer efforts help others. From this, students may develop a capacity for empathy and acquire a frame of reference for learning about themselves in relation to their community.

3 Orientation and Training

Genesis offers vocational classes that address such topics as basic job skills (e.g., promptness, following directions), appropriate attitudes while at work, cooperation with others, and on-the-job ethics. The Depository provides orientation with an introductory video and tour, and on-site training as needed.

4 Carrying Out the Project

At the site, teams of volunteers sort, inspect and repackage donated food. For instance, noodles may be donated in 500-pound boxes, and must be repackaged into one- or two-pound plastic bags that are more manageable for community kitchens and food pantries. Food safety inspections include removing swollen or damaged cans, perishables, home-packed items and food with expired dates.

5 Evaluation and Celebration

The Genesis staff supervisor works alongside the student volunteers and assesses them as they work. A weekly meeting is held with each student to discuss strengths and areas for improvement. In addition, the Depository provides feedback for the Genesis staff. As a result of the project, one Genesis student is being trained to operate heavy warehouse equipment, with potential of being hired by the Depository after graduation.

Habitat for Humanity

In many communities, there are individuals and families in need of housing assistance.

In many communities, there are individuals and families in need of housing assistance, because they are homeless or live in substandard houses that are inadequate or unsafe.

According to the 1990 census, the number of homeless individuals in the United States is between 250,000 and three million. More precise numbers are difficult to obtain as individuals who do not have a permanent residence cannot easily be counted. Nevertheless, it is likely that there is a homeless population in your community.

Many communities also have people living in substandard housing. Among these people may be families with limited income resulting from a family member who works at a part-time, temporary, or minimum wage job that is insufficient to pay for basic necessities. Others requiring assistance may be the physically challenged or retired elderly who live on fixed incomes.

Several national and local groups assist the homeless and people living in substandard housing in such a manner that their dignity and self-respect is honored. One such agency is Habitat for Humanity, an international organization that uses mostly volunteer labor to build homes for those with limited income. Recipients of Habitat for Humanity homes invest "sweat equity" in their homes by working side-by-side with volunteers.

High school students who volunteer in a Habitat for Humanity project may contribute to the community in many ways. Participation as a volunteer provides others the opportunities of home ownership which encourages pride, family stability, educational achievement and responsible citizenship. Newly constructed or home improvements may add to the community's tax income.

- Are there people in need of housing assistance in your community?
- Is there a Habitat for Humanity chapter or a similar agency in your community?

Did you know...

- In 1994, Habitat for Humanity International finished building its 30,000th house, and has more than 1,000 active affiliates around the world.
- Volunteers for Habitat for Humanity in Sacramento, California, recycle 100 pounds of steel nails that are removed from old wood each year.
- It is estimated that in 1994, 40,000 homes in the U.S. were framed using recycled steel.

CASE STUDY

No. 5

Carolina Day School, Asheville, North Carolina

Western North Carolina Habitat for Humanity

Project

Students formed the first high school chapter of Habitat for Humanity in western North Carolina, complete with officers and regular meetings. The Carolina Day School chapter has 15-20 members, involves 25-30 percent of the 140 high school students each year, and involves school staff and community members in its projects.

Performance/ Product

Construction site labor and fund-raising activities to benefit Western North Carolina Habitat for Humanity.

Project Planning Suggestions

If there is not a Habitat for Humanity chapter in your community, contact the United Way for a list of local agencies that provide housing and home improvements to those in need.

1 Gathering Information

Carolina Day School students and teachers helped sponsor Home Run for Habitat, a five-kilometer race to benefit the Western North Carolina Habitat for Humanity (WNC-HFH). The energy and leadership demonstrated by the high school students prompted WNC-HFH to approach the school about initiating a volunteer project. Under the guidance of faculty members, students formed the Carolina Day School Chapter of Habitat for Humanity.

2 Planning the Project

Students may volunteer for either construction or fund-raising projects. A student team schedules the projects as early as possible in the school year and then enters the projects onto the school calendar to avoid conflicts with other school activities. Promotional flyers and sign-up sheets are posted in the school hallway, and announcements are made to recruit volunteers from the student body. Permission forms and liability waivers are given to the volunteers for their parents/guardians to sign. Additional reminders are mailed to the volunteers' homes one week prior to the work date. **Classroom Connection** The project requires academic knowledge and skill in language arts for creating promotional materials and giving oral presentations. Students' personal growth is enhanced through tasks involving cooperative work, the discipline of being present and prompt for projects, the satisfaction of building something with their own hands, the opportunity to work side-by-side with recipient families, and the realization that simple as well as more complex tasks are critical to project success.

3 Orientation and Training

Training for construction volunteers is provided at the Habitat site by experienced adult volunteers. In addition, the school has an active advisor program, which designates one advisor for every nine students.

4 Carrying Out the Project

Students at the construction site are supervised by adult volunteers. Tasks vary widely and include painting, driving nails, landscaping, installing insulation, clearing fallen limbs, digging footings, and moving furniture for recipient families. Fund-raising projects have included selling holiday greeting cards, working at a gift-wrapping booth, and organizing a concert in which faculty and community members provided the musical talent.

5 Evaluation and Celebration

Students reflect upon their experiences at chapter meetings and share their activities with the student body at assemblies. The faculty is designing an elective course in which volunteer projects will be integrated into a writing course. WNC-HFH has invited a student representative to sit on its Board of Directors.

Habitat for Wildlife

In many settings, native wildlife habitat is being overtaken by homes, lawns and cultivated crops.

In many urban, suburban and even rural settings, native wildlife habitat is being or has already been overtaken by homes and other buildings, lawns and cultivated crops. In addition, non-native plants and animals introduced from other areas sometimes compete with native species for food and space. It is likely that there are wildlife species in your area that are pressured by a lack of suitable places to live and competition with non-native species.

High school students may assist wildlife by establishing a wildlife habitat project, or volunteering in an existing project. These projects may be as simple as installing a bird feeder or bat house, or as extensive as constructing a wetland.

Regardless of the size of the wildlife habitat project, student volunteers may participate in many ways. They may conduct a preliminary survey of the area for plants and animals that already live there; physically construct the habitat; maintain the habitat; monitor the habitat for wildlife use; analyze data from monitoring activities; and compare the data with the preliminary survey. Agencies such as the National Wildlife Federation, state departments of natural resources, or local and national park districts often work with high school students to organize wildlife habitat projects.

- Are you familiar with the wild plants and animals native to your community? Are any of these species threatened or endangered?
- How has human development affected wildlife species in your community?
- How could you help wildlife find adequate habitat? What would you provide?

Did you know...

- Brush piles, logs and fallen trees provide excellent habitat for many species. Resist the temptation to "tidy up" the forest floor.
- Not long ago, wetlands were generally regarded as wasteland. Now we know that wetlands have many valuable functions, including filtration of impurities from water, flood water retention, shoreline erosion control, and wildlife habitat.
- Bird feeders made from recycled plastic are easy to clean, mildew resistant, and help divert plastics from the landfill.

CASE STUDY

No. 6

North Cobb High School S.A.V.E. Environmental Club, Kennesaw, Georgia

National Wildlife and Georgia Wildlife Federations

Project

Members of the North Cobb High School S.A.V.E. Environmental Club followed guidelines from the National Wildlife Federation and the Georgia Wildlife Federation to establish a certified habitat for native wildlife, and beautify a section of the school grounds.

Performance/ Product

Created and maintained a 200-square-foot bird and butterfly garden that can be viewed from the school hallway.

Project Planning Suggestions

Obtain permission from property owners before beginning a wildlife habitat project. Train volunteers to identify and avoid plants such as poison ivy, and check in advance for student allergies to bee stings.

1 Gathering Information

The North Cobb High School S.A.V.E. Environmental Club is an organization for students of all academic interests to raise social consciousness and make a difference in the local environment. Teacher coordinators select projects from which students may choose, such as biological sampling and kudzu control (a non-native plant) with the National Park Service, water quality monitoring, recycling, or a wildlife habitat project.

2 Planning the Project

Student volunteers obtained information and guidelines from the National Wildlife Federation. The Georgia Wildlife Federation provided garden plans and recommendations for plant materials that attract native Georgia birds and butterflies. Students selected appropriate plants for the site, and teacher coordinators purchased the plants, gardening equipment, and a bird feeder from a local nursery that granted a discount to the club. One volunteer arranged the donation of a park bench and a bird bath to the project. Students worked with the teacher coordinators to identify tasks and schedule volunteers. **Classroom Connection** The project complemented academic knowledge and skill in the following areas: ecology for studying animals in their habitats; biology for studying and identifying plants and animals; horticulture for preparing the garden and caring for plants.

3 Orientation and Training

The National Wildlife Federation and the Georgia affiliate provided valuable support and information for the project. No special skills were required other than a general knowledge of gardening and a willingness to perform manual labor.

4 Carrying Out the Project

Teams of student volunteers prepared the soil, planted the 10 x 20 foot plot, and installed the bird feeder, bird bath and park bench. They also established a brush pile to provide cover for rabbits and other small animals. Habitat maintenance was scheduled for Wednesday afternoons, and included watering, weeding, and cleaning the bird feeder and bird bath. The feeder and bath were filled each morning before school. Students monitored the habitat for use by wildlife.

5 Evaluation and Celebration

Participants were rewarded with positive comments from peers, teachers and school staff who observed the habitat through the hall window, and by receiving certification as a Backyard Wildlife Habitat by the National Wildlife Federation. Plans are being made to create a new, larger habitat for use as an outdoor classroom by all classes, including art, language arts, music and science.

Living Historical Farms

Living historical farms reenact farm life as it was in earlier periods of history.

Living historical farms reenact farm life as it was in earlier periods of history. Volunteers and staff often dress in period clothing as they perform farm duties and greet visitors.

Living historical farms generally are functional farms that change in atmosphere with each day and season. Volunteers use horses, windmills and human muscle to raise crops. In some cases, such crops are sold to help support the farm. Many of these farms have been active in maintaining rare or endangered breeds of livestock that were popular in the past but are not widely used on farms today. Living historical farms provide an opportunity for visitors and volunteers to experience farm life of the past and compare it to the present.

High school students who volunteer at a living historical farm may have the opportunity to care for livestock, plant and harvest crops using hand-held or horse-drawn equipment, preserve food, make essentials (e.g., soap, candles, quilts), repair fences and equipment, and interact with the public by answering questions about farm tasks and history.

Volunteers may also assist with historical research, bookkeeping, mailings and other clerical work.

- What was it like to live and work on a farm 100 years ago? How have farms changed in the last century?
- Do people in your community have a knowledge of local history and an understanding of the ways in which people lived in the past?
- How would working on a living historical farm enhance your understanding of local history? How might it further develop skills you can use in the world today?

Did you know...

- In 1890, the number of U.S. citizens living on farms was 24,771,000 — or 42.3 percent of the total population. In 1991, this number was 4,632,000 — or 1.9 percent of the total population.
- Until the all-steel plow was invented in 1837, pioneers in the plains states found it nearly impossible to raise crops. Wooden plows could not break through the sod.
- Even many years ago, farm equipment was made with recycled steel.
- Animal bedding and manure is composted on many farms today, as it was in the past.

CASE STUDY

No. 7

Santa Fe Indian School, Santa Fe, New Mexico

El Rancho de las Golondrinas, Santa Fe, New Mexico

Project

As part of the Santa Fe Indian School's innovative Youth-Elder Mentorship Program, ninth grade students perform service at El Rancho de las Golondrinas. This living historical ranch was originally a colonial Spanish *hacienda*, (plantation) established in 1710 and family-owned until 1933.

Performance/ Product

Assist the ranch foreman with maintenance of corrals, fences and trails in a program that is fully integrated into the school curriculum.

Project Planning Suggestions

If there is no living historical farm convenient to your school, consider a living history museum (See listings in *Appendix: Resources*, page 27.) or a local museum of natural history or science. Also consider interviewing senior citizens to compile a local history of your community.

1 Gathering Information

The Youth-Elder Mentorship Program of Santa Fe Indian School provides Native American students with an appreciation and understanding of their heritage. In this program, funded by a grant from the McCune Foundation, ninth-grade students regularly visit neighboring *pueblos* (villages) to learn of their rich oral tradition, and assist with household tasks if needed. In addition, students perform service for non-Indian agencies such as the Salvation Army and Habitat for Humanity to become familiar with the broader community.

El Rancho de las Golondrinas is a functioning ranch that raises livestock and crops. The ranch has an established volunteer program in which adults and high school students assist with maintenance, lead tours, interpret ranch life for the public, and make soap, candles and woven goods that are sold at an annual auction to help support the ranch.

2 Planning the Project

Students and teachers generate ideas for integrating the visits to the ranch, pueblos, and other agencies into the curriculum. A team of teachers reviews the list of ideas and decides upon the focus of each visit. Transportation to the volunteer sites requires advance planning of the use of the school bus and vans. **Classroom Connection** The program required academic knowledge and skill in the following areas: language arts for writing essays; photography for documenting visits; social studies for understanding community issues at the sponsoring agencies and pueblos; various subjects as determined by the focus of each visit.

3 Orientation and Training

Teachers brief the student volunteers in advance on the academic focus of each visit. El Rancho de las Golondrinas provides on-site training for specific tasks in a one-on-one mentoring program.

4 Carrying Out the Project

Small groups of ninth grade students visit the various volunteer project sites on two mornings each month. At the ranch, students assist the maintenance foreman with repairing corrals, installing fencing, and various other tasks. After each visit, students write an essay describing the experience and what they learned from it.

5 Evaluation and Celebration

The school staff prepares a monthly summary of the program for the school administration and for grant reports. As a result of the program, a team of students is producing a school newsletter that will feature the student essays and photographs.

Recycling Production

Educating the public on the "what, when, why and how" to recycle is often a challenge.

Educating the public on the "what, when, why and how" to recycle is often a challenge for the local government agencies and organizations that are responsible for solid waste management. To inform the public of procedures for recycling and the items that can be recycled, an agency may create brochures, door hangers, posters, public service announcements for radio, television or newspaper ads. Videos that describe recycling programs in more detail are often used for public presentations, or loaned to schools and community groups.

Schools are getting more involved with recycling. Thus, many students recycle at school and at home. In the effort to educate families about the types of items accepted and the proper preparatory procedures, solid waste management professionals are finding that students are excellent "home instructors" of recycling and are encouraging schools to assist with recycling education.

High school students can educate their peers and younger students about recycling by creating recycling "productions" such as videos, skits, posters, or storybooks to use in peer or cross-age volunteer teaching experiences.

- How does your community inform and educate its citizens about recycling?
- What agencies or organizations in your community are responsible for recycling and solid waste management?
- What do you think will help educate your peers and younger students about recycling?

Did you know...

- At the end of the 1980's there were about 600 curbside recycling programs in the United States. By 1994, that number had increased to more than 6,000.
- From 1990 to 1993, the U.S. Environmental Protection Agency (EPA) estimated that Americans increased the amount of material recycled from 17 to 22 percent of the nearly 207 million tons of municipal solid waste generated each year.
- From 1988 to 1994, the recycling rate for steel cans increased from 15 to 33 percent. The Steel Recycling Institute has set a goal of 66 percent for steel can recycling by year's end 1995.

CASE STUDY

No. 8

John Marshall High School, Milwaukee, Wisconsin

SC Johnson Wax, Racine, Wisconsin

Project

SC Johnson Wax selected John Marshall High School to assist its Environmental Actions Department in producing "Time and Time Again," a video designed to educate students, teachers and recycling coordinators about the role of the individual in diverting recyclable material from landfills to recycling facilities.

Performance/ Product

Production of a 15-minute environmental education video about today's critical recycling issues, featuring new information about steel aerosol can recycling.

Project Planning Suggestions

By March 1995, every high school in the U.S. will have received a complimentary copy of "Time and Time Again." The video is also available through MODERN Distribution (1-800-243-6877) for $9.95.

1 Gathering Information

Students visited video professionals at SC Johnson's Worldwide Headquarters, interviewed representatives from a landfill, a materials recovery facility (where recyclables are processed), conducted research at the local library and obtained information from industry associations such as the Steel Recycling Institute.

2 Planning the Project

The project plan was developed using information from the SC Johnson Environmental Actions Department's business plan. The students set up a five-month schedule that was approved by SC Johnson: 1) pre-production – treatments (scene descriptions), writing, and editing the script, 2) production – videotaping of raw footage; and 3) post-production – editing, creating animation, and assembling the video. **Classroom Connection** Involvement in the project required academic knowledge and skill in the following areas: language arts for scriptwriting and on-camera appearances; environmental science for developing content; music for selecting background music; and video production for designing, lighting, directing, animating and editing tasks. The project enhanced student social and personal growth through tasks involving cooperative work on crews and collaboration with professionals at SC Johnson.

3 Orientation and Training

The broadcast program teacher at the high school provided most of the training. SC Johnson professionals provided additional training in scriptwriting and producing of videos.

4 Carrying Out the Project

Twenty-nine production class students worked as crew members who were responsible for scripting and filming select scenes. Each student had the opportunity to perform a variety of tasks (e.g. recommend various concepts for the film, write portions of the script, assist with on-camera performers) . Students recorded video footage of a supermarket, a landfill, and a materials recovery facility, and completed their final edits within the projected time.

5 Evaluation and Celebration

The teacher used authentic assessment to evaluative students, on three bases: individual performance, crew performance, and individual/crew final product. Students reflected on the project through daily crew meetings and monthly production team meetings. SC Johnson hosted a premiere showing of the video in Milwaukee, featuring the broadcast program students and their teacher. Guests included the President/CEO of SC Johnson, government officials, school officials, Marshall administration, staff and parents.

School Recycling

The U.S. EPA estimates that in 1993, Americans recycled 22 percent of municipal solid waste.

Did you know...

- More than 200 recyclables processing facilities have opened in the past few years.
- In recent years, recovery rates for recycled items have increased, demonstrating that the country's resources are being managed more efficiently.
- The Steel Recycling Institute offers information about recycling food cans and other packaging found in many school cafeterias.

The U.S. Environmental Protection Agency (EPA) estimates that in 1993 Americans recycled 22 percent of the 207 million tons of municipal solid waste generated, an increase from 17 percent in 1990. As this trend continues in the 1990s, many state recycling programs will realize their recycling and waste diversion goals through expanded programs that include school recycling.

As schools consider operating recycling programs, the benefits can be easily identified. Overall waste minimization saves resources and energy, and reduces disposal costs. Some states may require certain recycling practices with which the school should be in compliance, and larger schools may be able to market their own recyclables and earn money from their sale. Finally, students are provided with an educational opportunity that can have a positive impact on the school and the community.

Items typically found in the school trash, such as paper, aluminum, steel, plastic and glass products, can be recycled in most communities. Initiating a school recycling program requires a local market for the materials and a commitment from the principal, teachers, staff and students at each school.

High school students involved in a school recycling program may conduct a waste sort to identify the recycling potential for each collected material, serve on a planning committee for the program, train students to recycle, monitor the recycling containers, and organize recognition events for volunteers.

- How is solid waste managed in your school district?
- What organizations in your community are responsible for solid waste management?

CASE STUDY

No. 9

G. Holmes Braddock Senior High School, Miami, Florida

Dade County Public Schools, Florida

Project

G. Holmes Braddock Senior High School students organized a school recycling system during summer school. When the school year began, the project was expanded to provide recycling services to the entire school. This project is part of the Dade County Public Schools recycling program in which 290 schools collect steel and aluminum cans and paper under a contract with a local recycling company.

Performance/ Product

Institution of a school recycling system that will continue after the present participants graduate, and promotion of the system to heighten student awareness and participation.

Project Planning Suggestions

Request *Recycling in Schools* from the United States Conference of Mayors. (See *Appendix: Project Resources*, page 27.)

1 Gathering Information

During summer school, a volunteer intern for the Dade County Schools Office of Energy and Recycling gave a lecture to the physical science class. The intern explained that the population of the school, which exceeds 3,000, creates a high demand on resources, thereby providing the need and the opportunity for recovering these resources through recycling.

2 Planning the Project

The physical science class developed a project plan that refined and expanded the existing school recycling program to service the 3,000 summer students. Students conducted research to identify locations where recyclables are generated, and evaluated each location for the space and type of container needed. Once the plan was developed, the custodial staff was consulted for feedback and suggestions. The long-term goal of the project was to make the recycling program a part of school operations, with students participating in monitoring and education/awareness activities. **Classroom Connection** The project required academic knowledge and skill in the following areas: language arts for preparing education/awareness flyers; public speaking for giving effective presentations; science for explaining the project background; and art for creating signage for the recycling containers.

3 Orientation and Training

The physical science teacher worked with groups of students to develop methods for educating students and collecting recyclables. Each group experimented with various methods and then the groups as a whole chose the method that best met their needs.

4 Carrying Out the Project

Over the summer, volunteers worked with the custodial staff in the set-up and operation of the school recycling program. The vast work required for a successful program was quickly realized by the students, so when the school year began, the custodial staff took over the primary responsibilities of the recycling program, and students performed monitoring and education services. Approximately 100 steel food cans are collected each week, in addition to aluminum cans. Paper is also collected from offices and classrooms.

5 Evaluation and Celebration

The students feel they are contributing to the welfare of south Florida and its local geology by keeping the recyclable material out of the landfill. Braddock receives a deposit into the school's general fund for tonnage of recyclables collected.

Teaching Nature's for ME

Environmental education is growing in acceptance as an essential part of academic learning

Environmental education is growing in acceptance as an essential part of academic learning. While many students in kindergarten through grade 12 learn about the environment through their courses of study, preschool-aged children's environmental experiences are often limited due to a lack of materials appropriate to their age.

For some preschoolers, environmental education is simply an outing in a park. For those in urban settings, visits to "green spaces" may be infrequent. To establish a preschool environmental education program, educators often seek the assistance of outside organizations such as colleges and universities that can provide computer searches for environmental education materials. The ENC (Eisenhower National Clearinghouse) and ERIC (Educational Resources Information Center) are examples of two central sources of information accessible to most colleges and universities.

The Steel Recycling Institute (SRI) offers *Nature's for ME*, an environmental and recycling education program for preschool, that can be previewed through the ENC and ERIC systems. *Nature's for ME* was adapted from a program developed by Head Start educators and environmental education organizations. It is available from the SRI as a kit that includes a teacher's guide in a decorative storage box. Interactive *Nature's for ME* workshops can be scheduled to train educators of preschool children on the use of the program.

High school students can use environmental education materials like *Nature's for ME* to teach preschool children about the environment and recycling.

- What organizations in your community provide programs for young children?
- What environmental education programs are available for preschoolers?

Did you know...

- Through 19,000 Head Start programs composed of 96,000 staff members, more than 600,000 children are taught in all 50 states, including Indian reservations and migrant worker camps.
- Many states require environmental education for students in preschool through grade 12.

CASE STUDY

No. 10

Scotia-Glenville and Schenectady High Schools, Scotia/ Schenectady, New York

Capital District Head Start Program, Scotia, New York

Project

Scotia-Glenville and Schenectady High School students attended a *Nature's for ME* workshop at the Sixth Annual Recycling Conference in Syracuse, New York, to learn methods for teaching environmental and recycling activities to preschool children. As a result of the training, students established cross-age teaching projects at various Head Start locations.

Performance/ Product

Teaching environmental and recycling education activities to preschool children.

Project Planning Suggestions

Request the *Nature's for ME* kit and workshop training information from the Steel Recycling Institute. (See *Appendix: Project Resources*, page 27.)

1 Gathering Information

Scotia-Glenville High School, a suburban school, and Schenectady High School, an urban school, formed a unique partnership to develop a cross-age teaching project. Students contacted the New York Head Start Association to obtain addresses of nearby Head Start programs, sent letters to 15 programs, from which they received five responses. Interviews were scheduled with Head Start administrators to discuss the project and select project sites.

2 Planning the Project

Four teams of eleventh and twelfth grade students were matched with participating Head Start programs. The teams met with Head Start teachers and assistants to schedule activities to take place over an eight week period, and define their respective roles. For discipline and liability reasons, the teacher or assistant was required to be present at all times. **Classroom Connection** The project required academic knowledge and skill in the following areas: art for conducting craft projects; public speaking for giving presentations; environmental science for explaining background on activities; music for leading songs; and home economics for knowledge of child behavior and cooking. Student personal growth was enhanced by performing leadership tasks, working cooperatively with teachers in planning the activities, and interacting with preschoolers.

3 Orientation and Training

The teacher coordinator conducted follow-up training to the *Nature's for ME* workshop. Student teams role-played scenarios involving young children, to insure that the teams understood and were prepared for the activities. Each Head Start program gave an orientation at its facility prior to the first class activity.

4 Carrying Out the Project

Teams visited their designated Head Start program each week to teach the planned activities. Every three weeks the teams met to share their experiences. A contingency plan was designed to provide substitutes for team members in the event that a member was unable to teach due to schoolwork or other activities.

5 Evaluation and Celebration

The teacher used weekly reflection to evaluate individual students and student teams. Each student kept a log, a portfolio of their preschoolers' art, letters of appreciation/evaluation from the teachers. These items were submitted after completion of the project. To celebrate the success of the project, each site organized an outing and picnic on the final activity day with the preschool.

Student Checklist for Effective Projects

After you have selected a community volunteer project, use this checklist and the student worksheets to organize and plan the project.

1. Gathering Information

- ☐ Contact agencies in your community to determine how they are providing the services you would like to offer through your project.
- ☐ Invite representatives from potential sponsoring agencies to speak about their programs and explain how student volunteers can help them meet their goals.

2. Planning the Project

- ☐ Select a sponsoring agency. Work with the agency to complete the *Project Planning Guide*, pages 23-24. Be certain that you and the agency understand clearly the project goals and tasks.
- ☐ If you have not already done so, complete the *Student Skill/Interest Survey*, page 22. Match student volunteers with appropriate project tasks.
- ☐ Cooperate with your teacher(s) to determine how the volunteer experience will complement your coursework and what you wish to learn from your experience.
- ☐ Work with your teacher to establish methods for project reflection and demonstration of your accomplishments.
- ☐ Complete and sign the *Student/Teacher Contract*, page 25. Be certain that you know and understand your responsibilities.
- ☐ Complete a project permission form with your teacher and parent/guardian.

3. Orientation and Planning

- ☐ Arrange for students to visit the volunteer site prior to beginning the project.
- ☐ Refer to the *Project Planning Guide*, pages 23-24, to determine the training needs of the volunteers. Help organize and participate in the training process. Training may be conducted in the classroom and/or at the volunteer site.

4. Carrying Out the Project

- ☐ Follow your project plan to implement the project. Review the plan periodically and modify it if necessary.
- ☐ Reflect upon your experience after each time you volunteer, using the methods agreed upon with your teacher.
- ☐ Share your volunteer experience and accomplishments with your teacher and fellow students.

5. Evaluation and Celebration

- ☐ At the end of the project, ask the sponsoring agency to complete the *Student Assessment by Sponsoring Agency*, page 26.
- ☐ Summarize your volunteer experience by describing what you did for the sponsoring agency and the community, and what you gained from the project.
- ☐ Brainstorm about ways to celebrate completion of the project and reward accomplishments. Help organize and participate in the celebration.

Student Skill/Interest Survey

Name: _____ Date: _____

General interests (√)

___ organization
___ persuasive skills
___ recycling
___ driving a car
___ meeting new people
___ camping
___ researching
___ drawing, painting, designing
___ reading and writing
___ animal study/care
___ mental games
___ repairing things
___ gardening, landscaping
___ keeping records
___ handling money
___ athletics
___ teaching
___ singing, dancing, entertaining
___ radio/TV programming
___ dramatics
___ taking responsibility
___ canoeing
___ making decisions
___ leading discussion groups
___ problem solving
___ outdoor activities
___ analyzing
___ cooking
___ carpentry
___ crafts
___ medical skills
___ speaking to groups
___ environment
___ budgeting
___ working with others
___ current events
___ working with math problems
___ sewing
___ foreign languages
___ others _____

_____

Work experience (paid or volunteer) and skills –

Hobbies and recreation –

Career interests –

Project Planning Guide

Complete in cooperation with the sponsoring agency.

Name: _____

Date: _____

Project: _____

What are the project goals?

Sponsoring Agency: _____

Agency Representative: _____

Address: _____

City/State/Zip: _____

Telephone: _____

Task	Knowledge, skill & experience needed	Who will volunteer?	When are the volunteers available?

Project Planning Guide, continued

What training/orientation is needed? What is provided by the sponsoring agency? What is provided through classroom instruction?

What special equipment, supplies or uniforms are needed? Who will provide them?

How will the volunteers travel to the training site? Consider transportation and parking.

What are liability issues that may relate to the project?

From whom is permission necessary? (Parents/Guardian, School Board, Principal, Other Teachers, etc.)

What is the projected schedule for the project? List a starting and ending date.

Student/Teacher Contract

Name: _____ Project: _____

Project starting date: _____ Project ending date: _____

Project goals:

Tasks:

Training plan:

Learning outcomes:

Methods for reflection and sharing accomplishments:

I understand my responsibilities and agree to complete all assignments.

_____ _____

Signature of Student *Date*

_____ _____

Signature of Teacher *Date*

Student Assessment by Sponsoring Agency

Requested for completion by a representative of the sponsoring agency.

Sponsoring Agency: _____ Date: _____

Agency Representative/Title: _____

Project: _____ Student: _____ Teacher: _____

Rating System:

1= unsatisfactory 2=fair 3=good 4=excellent n/a=not applicable

1)	Punctual	1	2	3	4	n/a
2)	Attends to assigned tasks	1	2	3	4	n/a
3)	Dresses appropriately	1	2	3	4	n/a
4)	Has a positive, willing attitude	1	2	3	4	n/a
5)	Works independently	1	2	3	4	n/a
6)	Responds positively to constructive criticism	1	2	3	4	n/a
7)	Is aware of own strengths and weaknesses	1	2	3	4	n/a
8)	Responsive to a variety of circumstances	1	2	3	4	n/a
9)	Inquisitive about agency and clients	1	2	3	4	n/a
10)	Works well with staff, clients, fellow students	1	2	3	4	n/a
11)	Overall performance	1	2	3	4	n/a

Additional comments about the student:

Comments about the project:

I understand that my comments may be used to aid in assessing student performance.

_____ _____

Signature of Agency Representative *Date*

Project Resources

Adopt A Waterway

Bob Emmett
National Oceanic Atmospheric Administration
National Marine Fisheries Service
Point Adams Biological Field Station
P.O. Box 155
Hammond, OR 97121
503/861-1818
E-mail address – remmett@sci.nwfsc.noaa.gov

Neal Maine
Pacific Educational Resources
P.O. Box 2367
Gearhart, OR 97138
503/738-4021

Animal Shelters

Humane Society of the United States
2100 L Street, NW
Washington, DC 20037
202/452-1100

Appliance Recycling

Steel Recycling Institute
Appliance Recycling Information
680 Andersen Drive
Pittsburgh, PA 15220-2700
412/922-2772

Food Salvage

United Way of America
701 North Fairfax Street
Alexandria, VA 22314-2045
703/836-7100

Habitat for Humanity

Mac Nelson
Carolina Day School
1345 Hendersonville Road
Asheville, NC 28803
704/274-1757; 704/251-0678 fax

Habitat for Humanity
121 Habitat Street
Americus, GA 31709
1-800-HABITAT

United Way of America
701 North Fairfax Street
Alexandria, VA 22314-2045
703/836-7100

Habitat for Wildlife

National Wildlife Federation
Backyard Wildlife Habitat Program
1400 Sixteenth Street, NW
Washington, DC 20036-2266
1-800-432-6564

Living Historical Farms

Anderson, Jay. *Living History Sourcebook*. The American Association for State and Local History, 1985.

American Association for State and Local History
530 Church Street, Suite 600
Nashville, TN 37219-2325
615/255-2971

Association for Living Historical Farms and Agricultural Museums
El Rancho de las Golondrinas
Route 14, Box 214
Santa Fe, NM 87505
505/471-2261

Recycling Production

MODERN Distribution
1-800-243-6877

"Time and Time Again" Marketing Services
S.C. Johnson & Son, Inc.
1525 Howe Street
Racine, WI 53403-5011
414/631-4709; 414/631-3829 fax

School Recycling

Porter, J. Winston, Ph.D., for the United States Conference of Mayors. *Recycling in Schools*, 1992.
The National Recycling in Schools Program
1620 Eye Street, NW
Washington, DC 20006
202/293-7330; 202/293-2352 fax

See also *Appendix: List of Organizations*, page 28.

Teaching Nature's for ME

Steel Recycling Institute
Nature's for ME
680 Andersen Drive
Pittsburgh, PA 15220-2700
412/922-2772

List of Organizations

Contact the following organizations for information on recycling, environmental issues and volunteerism.

Aluminum Recycling Association
1000 16th Street, NW, Suite 400
Washington, DC 20036
202/785-0550

American Forest and Paper Association
1250 Connecticut Avenue, NW, Suite 200
Washington, DC 20036
202/463-2420

American Iron and Steel Institute
1101 17th Street, NW, Suite 1300
Washington, DC 20036
202/452-7100

American Plastics Council
1275 K Street, NW, Suite 500
Washington, DC 20005
202/371-5319

Aseptic Packaging Council
1000 Potomac Street, NW, Suite 401
Washington, DC 20007
202/333-5900

Association of Home Appliance Manufacturers
20 North Wacker Drive
Chicago, IL 60606
312/984-5800

Can Manufacturers Institute
1625 Massachusetts Avenue, NW
Washington, DC 20036
202/232-4677

Corporation for National Service
1201 New York Avenue, NW
Washington, DC 20525
202/606-5000

Earth Kind
2100 L Street, NW
Washington, DC 20037
202/778-6149

Glass Packaging Institute
1627 K Street, NW, Suite 800
Washington, DC 20006
202/887-4850

Institute of Scrap Recycling Industries
1325 G Street, NW
Washington, DC 20005
202/466-4050

Keep America Beautiful, Inc.
Mill River Plaza, 9 West Broad Street
Stamford, CT 06902
203/323-8987

National Service-Learning Clearinghouse
R290 Vo-Tech Building, 1954 Buford Avenue
St. Paul, MN 55108
1-800-808-7378
E-mail address – serve@maroon.tc.umn.edu

National Recycling Coalition, Inc.
1101 30th Street, NW, Suite 305
Washington, DC 20007
202/625-6406

National Wildlife Federation
1412 16th Street, NW
Washington, DC 20036
202/797-6800

National Youth Leadership Council
1910 West County Road B
St. Paul, MN 55113-1337
612/631-3672

Steel Recycling Institute
680 Andersen Drive
Pittsburgh, PA 15220-2700
412/922-2772

Steel Shipping Container Institute
1101 14th Street, NW, Suite 1020
Washington, DC 20005
202/408-1900

Cross-Reference of Project Ideas to Cycles for Science Activities

The following are suggestions for linking *Community Volunteer Projects* with other *Cycles for Science* activities to reinforce classroom science learning.

Project Idea	Related *Cycles for Science* Activity
Adopt a Waterway	Biology – Leachate Collection (water quality) Chemistry – Nails in Solution (chemical reactions)
Animal Shelters	Biology – Bones and Levers (anatomy)
Appliance Recycling	General/Earth Science – Metals for Toasters (appliance recycling) Chemistry – Recyclable Cars (car recycling)
Food Salvage and Recycling	Biology – Reducing Food Spoilage and Waste (canning techniques)
Habitat for Humanity	Physics – Steel Home (structural strength)
Habitat for Wildlife	General/Earth Science – Mining our Landfills (conservation)
Living Historical Farms	Biology – Composting with Worms (waste management) Physics – Quenched and Tempered Steel (properties of metals)
Recycling Production	Physics – What's a MRF? (recycling process)
School Recycling	General/Earth Science – Mining our Landfills (conservation, waste audit)
Teaching *Nature's for ME*	Chemistry – Sorting Commingled Metals (magnetic sorting of steel) Physics – Fluff Stuff (magnetic sorting of steel)

For more information on the *Cycles for Science* curriculum supplements for Biology, Chemistry, General/Earth Science and Physics, contact the Steel Recycling Institute, 680 Andersen Drive, Pittsburgh, PA 15220-2700, 412/922-2772.

SRI Program Feedback

Please return this form to:
Cycles for Science/Community Volunteer Projects
Steel Recycling Institute
680 Andersen Drive
Pittsburgh, PA 15220-2700
412/922-2772

Name: _____ School/Agency: _____

Address: _____ Phone: (____) _____

City: _____ State: _____ Zip: _____

Subject area(s): _____

Grade level(s): _____ Number of students: _____

We are interested in your experiences in using the *Cycles for Science Community Volunteer Projects*. Please provide information about your planning and implementation strategy for each volunteer project you conducted. Attach additional sheets if necessary.

Project:

Choosing the project:

Gathering information:

Planning the project:

Orientation and training:

Carrying out the project:

Evaluation and celebration:

Additional comments:

If your comments or ideas are utilized for future improvements, you will be credited in the acknowledgements of follow-up editions of *Cycles for Science Community Volunteer Projects*.